What is claimed is:

1. A method of data storage address translation, the method comprising:

receiving a first address in a first address space;

traversing a trie based on the first address; and

determining a second address based on the traversal.

2. The method of claim 1, wherein the first address has a different address space than the second address.

3. The method of claim 2, wherein the first address has a larger address space than the second address.

4. The method of claim 1, wherein the trie includes at least one leaf identifying an address in the second address space.

5. The method of claim 1, wherein the second address comprises an address of a cache memory.

6. The method of claim 5, further comprising, based on the traversal, determining whether the cache stores information identified by the first address.

7. The method of claim 6, wherein the trie comprises a multi-dimensional array, wherein an index of a dimension of the array corresponds to different trie branches.

8. The method of claim 7, wherein traversing the trie comprises, repeatedly, indexing into the dimension of the array using a portion of the first address.

9. The method of claim 5, wherein the first address comprises an address of permanent data storage.

10. The method of claim 1, wherein traversing the trie based on the first address comprises

performing an operation on the first address; and

traversing the trie using the operation results.

11. The method of claim 1, wherein the second address associated with the first address dynamically changes.

12. A data storage system, comprising:

(a) a storage area having a first address space;

(b) a cache having a second address space; and

(c) instructions for causing a processor to

(1) receive a first address in the first address space;

(2) traverse a trie based on the first address; and

(3) determine a second address in the second address space based on the traversal.

13. The data storage system of claim 12, wherein the instructions further comprise instructions for causing the processor to determine whether the cache stores a block in the storage area based on the trie traversal.

14. The data storage system of claim 12, wherein the instructions for causing the processor to receive a first address comprise instructions for causing the processor to receive a first address included in a data access request received from a host connected to the data storage system.

15. The data storage system of claim 12, wherein the instructions for causing the processor to traverse the trie based on the first address comprise instructions for causing the processor to:

perform an operation on the first address; and

traverse the trie using the operation results.

16. The data storage system of claim 12, wherein the second address associated with the first address dynamically changes.

17. A computer program product, disposed on a computer readable medium, for data storage address translation, the computer program including instructions for causing a processor to:

receive a first address within a first address space;

traverse a trie based on the first address; and

determine a second address based on the traversal.

18. The computer program of claim 17, wherein the first address has a different address space than the second address.

19. The computer program of claim 18, wherein the first address has a larger address space than the second address.

20. The computer program of claim 17, wherein the trie includes at least one branch identifying an address in the second address space.

21. The computer program of claim 17, wherein the second address comprises an address of a cache memory.

22. The computer program of claim 21, further comprising, instructions for causing the processor to, based on the traversal, determine whether the cache stores information identified by the first address.

23. The computer program of claim 17, wherein the trie comprises a multi-dimensional array, wherein an index of a dimension of the array corresponds to different trie branches.

24. The computer program of claim 17, wherein the first address comprises an address of permanent data storage.

25. The computer program of claim 17, wherein the instructions for causing the processor to traverse the trie comprise instructions for causing the processor to:

perform an operation on the first address; and

traverse the trie using the operation results.

26. The computer program of claim 17, wherein the second address associated with the first address dynamically changes.

27. A method of data storage address translation at a system having a storage area composed of different physical devices, a shared cache for caching blocks of data in the storage area, and connections to different host processors, the method comprising:

receiving a storage area address within a storage area address space based on a request received from one of the host processors;

traversing a trie based on the storage area address, the traversing identifying a trie leaf identifying a cache address in a cache address space; and

changing the cache address associated with the trie leaf based on system alteration of cache contents.

28. A memory for storing data for access by an application program being executed on a data processing system, comprising a data structure stored in said memory, said data structure including information corresponding to a trie, the trie having leaves identifying different respective cache addresses.

29. The memory of claim 28, wherein the trie comprises a trie having branches corresponding to different portions of a storage area address.

30. The memory of claim 28, wherein the trie comprises a multi-dimensional array.